

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 are presently pending in this application, Claims 6-8 having been newly added by the present amendment.

In the outstanding Office Action, Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2002-161193 (hereinafter “JP ‘193”) in view of Shimizu et al. (U.S. Patent 5,919,844); Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘193 in view of Maeda et al. (U.S. Patent 6,190,787); Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2002-080695 (hereinafter “JP ‘695”) in view of Shimizu et al.; Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘695 in view of Maeda et al.; Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2002-212393 (hereinafter “JP ‘393”) in view of Shimizu et al.; and Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘393 in view of Maeda et al.

Claims 6-8 have been newly added herein. These additions in the claims find clear support in the specification and/or the claims as originally filed, for example, original claim 5, and no new matter is believed to be added thereby. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Before addressing the rejections based on the cited references, a brief review of Claim 1 is believed to be helpful. Claim 1 of the present invention is directed to an epoxy resin composition for encapsulating semiconductors and recites: “(A) an epoxy resin, (B) a phenol resin, (C) an inorganic filler, (D) a curing accelerator, (E) a glycerol tri-fatty acid ester

produced by dehydration condensation reaction of glycerol and a saturated fatty acid with a carbon atom content of 24-36, and (F) a hydrotalcite compound.”

The Office Action states that “it would have been obvious ... to add the instantly claimed hydrotalcite compound ... to the encapsulating composition” because “[t]he presence of the hydrotalcite provides enhanced humidity stability to the encapsulating composition” and because “[t]he presence of the hydrotalcite prevents corrosion of aluminum circuits and pads.” However, it is respectfully submitted that none of JP ‘193, Shimizu et al., Maeda et al., JP ‘695 and JP ‘393 teaches or suggests an epoxy resin composition formulated with, *inter alia*, “(E) a glycerol tri-fatty acid ester produced by dehydration condensation reaction of glycerol and a saturated fatty acid with a carbon atom content of 24-36, and (F) a hydrotalcite compound” as recited in Claim 1. By formulating an epoxy resin composition with a hydrotalcite compound and the claimed glycerol tri-fatty acid ester, the claimed glycerol tri-fatty acid ester is homogenously oozed out by the hydrotalcite compound exhibiting as a dispersion adjuvant, thereby improving mold releasability and suppressing stains on the surfaces of the mold and semiconductor packages.¹

More specifically, these effects attributable to the epoxy resin composition of Claim 1 are shown through the comparisons of Examples and Comparative Examples described in Applicants’ specification.

The epoxy resin compositions of Examples 1 to 7 contain a fatty acid ester (E) and a hydrotalcite compound (F) together with the components (A) to (C). As seen from Table 1 of Applicants’ specification, the continuous moldability of these compositions resulted in no defective releasability and no stains on the package surface after 500 shots, and the compositions exhibited excellent solder resistance.

¹ See, for example, the specification, page 7, line 9, to page 8, line 2.

In contrast, the composition of Comparative Example 1 does not contain a hydrotalcite compound (F), and the compositions of Comparative Examples 2 to 4 contain a hydrotalcite compound (F) and fatty acid esters other than the claimed fatty acid ester (E). As seen from Table 1, Comparative Example 2 failed in mold releasability after 150 shots, Comparative Examples 1 to 3 left stains on the package surface after 150 to 200 shots, and Comparative Examples 3 and 4 resulted in poor solder resistance.

As such, by formulating an epoxy resin composition with a hydrotalcite compound (F) together with the claimed fatty acid ester (E), the composition of Claim 1 clearly exhibits advantageous effects such as improvement in mold releasability and suppression of stains on the surfaces of the mold and semiconductor packages.

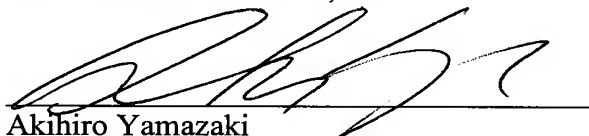
It is therefore respectfully submitted that the epoxy resin composition recited in Claim 1 is clearly distinguishable from JP '193, Shimizu et al., Maeda et al., JP '695 and JP '393, and their teachings would not render the epoxy resin composition recited in Claim 1 obvious.

For the foregoing reasons, Claim 1 is believed to be allowable. Furthermore, since Claims 2-8 depend directly or indirectly from Claim 1, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 2-8 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicant respectfully submits that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Akihiro Yamazaki', is written over a horizontal line.

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